THE ART OF THE MEDAL

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NEW YORK
1910

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IT is said that the fourth century B.C. saw the first piece of metal with an imprint. As civilization advanced and the necessity for a medium of exchange increased, pieces of metal were used and made standards of value.

Each piece of metal was melted separately and weighed to contain a certain value. Some of the early coins were bean-shaped or oval. They had the guaranty of the government on one side and four square holes on the other. These four holes merely show the projections of the iron upon which the piece of metal was placed in order to prevent it from slipping while the device was being struck.

Whether the devices on the early coins were struck with a steel die or with a hardened brass or copper die is still a matter of speculation. The method might vary according to locality. Later we find coins bearing a device on both sides, and this necessarily required more complicated tools.

From the specimens found in ancient ruins—one of which is to be seen in the Cabinet of Medals in Paris—we find that, in order to bring the two dies in a fixed position facing each other, a long piece of iron was welded or fastened to each die, these two pieces being joined together somewhat after the fashion of a pair of tongs. The metal was then placed between the dies, and the imprint made by the blow of a hammer. The dies seem mostly to have been cut intaglio with a chisel and hammer, as is done in the carving of marble. The stone-cutter's wheel or drill may also have served the die-cutters of that day.

There are but two ways that can be employed in the producing of a coin or medal: casting of molten metal in a stone or sand mold, or by striking between dies, as already described. This process of making coins was a very slow one, for it required several blows with a hammer to produce a full impression of the engraving. After every blow the piece of metal had to be reheated and placed in the exact position to meet the engraving, in order not to deface the relief already obtained. The hot piece of metal was held in position by a pair of tongs. This operation required three persons: one to hold the die, another to place the metal, and a third to strike the blow. Indeed, in many of the coins of that period now extant a double outline is seen, because the metal was not placed in its proper position when it received the last blow. In Greece the medallic art attained a high degree of perfection, exemplified by the work of Evænetos.

In the Syracuse medal Evænetos shows a happy com-

bination of spirit, movement, mass, and detail. Not only is there a noble interpretation of the individual forms and their proper relation to the whole, but also an extraordinary decorative sense woven into every line, giving to the empty spaces as much charm as to the modeled surfaces.

Modeling on a bas-relief for reduction.

The studies for these dies must have been quite similar to our own, sketches in soft wax being made for the composition. For the final model a slate may be used in order to have an even surface, or a background of wax upon which the design is traced with a point. Bit by bit the wax is applied until the full modeling of the design is made. The wax models were made in the exact size of the finished coin or medallion.

Cutting by hand with graver on relief die.

The translation of the model is made by tracing with a steel point upon a soft steel block called a die when it is cut intaglio or called a punch when cut in relief. In the process of cutting into the steel, the left hand holds the die firmly in position; in the right hand is held a steel engraving-tool called a burin, with which the die is cut by the pressure of the palm guided by four fingers. The thumb is used as a counterbalance on the die, so as to stop the pressure when the desired depth and length are reached.

The engraver carefully cuts into the steel with his burin, following the lines of the design, and almost after every cut of the tool the artist takes wax impressions of his die to see the progress of the work and to be sure that it agrees with the original wax model. A trained engraver's hand will in time develop such accuracy of touch that in leading his graver he can feel the direction of the cut or curve of line, no matter in what depth it may be.

Showing cameo and negative die.

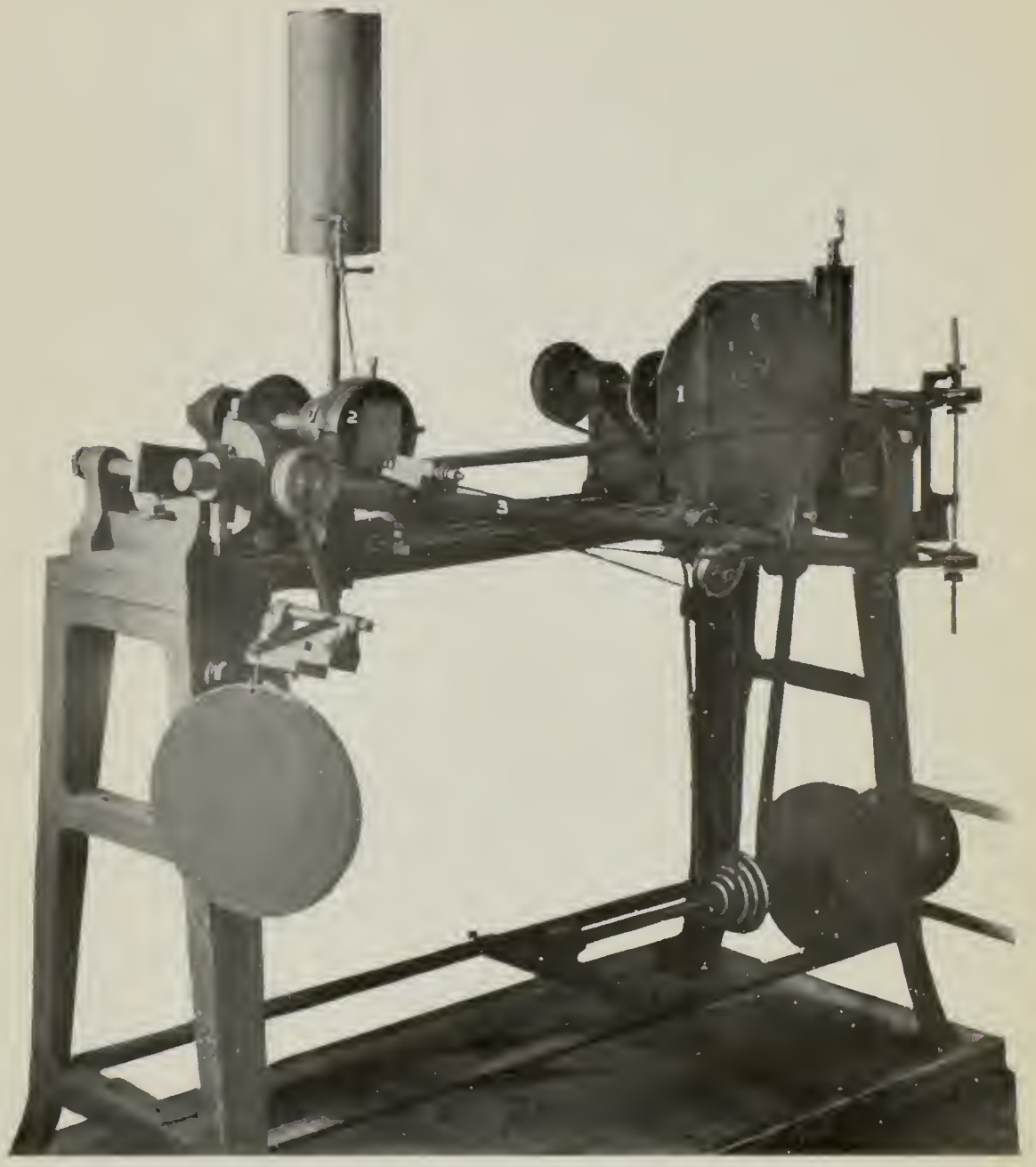
This process of cutting does not vary from the cutting of a cameo, except that in cameo-cutting the work is in relief and no wax impressions are necessary. The advantage of cutting a cameo or relief die is that several intaglio dies can be prepared from it by sinking the cameo into a soft block of steel, thus saving the necessity of cutting a new die in case of its breaking. After the die is cut, whether intaglio or cameo, it is hardened by heating and plunging into water.

Some hundred years before the introduction of the screw-press as applied to the striking of coins and medals—an invention of the latter part of the sixteenth century—rollers were used on which was engraved the required design, through which a strip of metal was run, thus obtaining as many impressions as the length of the metal permitted. The surplus metal was then cut away with shears or a saw.

Showing dies and collar, also engraver's tools and bench.

The screw-press brought with it important improvements, among which were a ring to encircle both dies, and disks which were cut uniform in size and thickness by means of a positive punch fitting into a negative. These disks, being somewhat smaller than the actual design, are placed between the dies, which are held together by the ring. The disk, being pressed, spreads and fully fills the ring, and thus the uniform appearance and thickness of all impressions is obtained.

For a long period small punches were used in the preparation of dies. Later larger punches, bearing the entire emblem which was to make the center of the coin or medal, were sunk by means of the press into the negative dies. This process necessitated the cutting of the border by hand or by lathe.

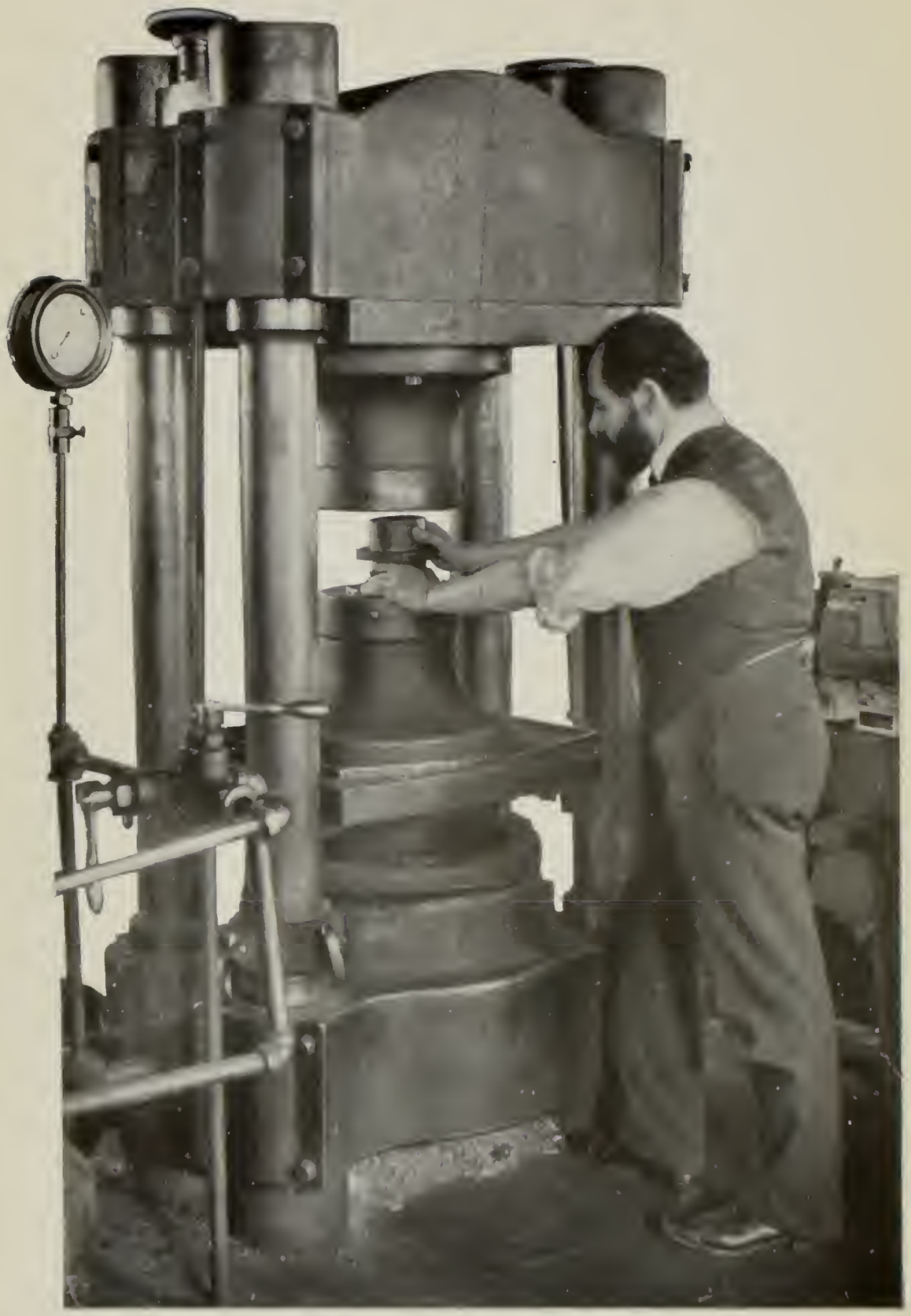


Reducing machine.

1, Model; 2, reducing steel die; 3, bar.

The reducing-machine invented by Contamin early in the nineteenth century is a kind of pantograph. A steel point follows the surface of the model and transmits, by means of a bar, its movements to another point which cuts the design into the steel to a reduced scale. The models are made four or five times larger than the actual size.

This machine saves the artist much of the tedious work required in the cutting of dies by hand. It copies the model with slight modifications, and if due allowance has been made, it will need but little retouching in the die.



Pressing a medal by hydraulic pressure.

The striking of a medal is entirely mechanical, and is done either by hydraulic pressure or by the screw-press. The metal disk is placed between the dies, and pressed until the full image is obtained. The number of pressings necessarily depends upon the height of the relief required. After each blow the metal disk is annealed. The coloring of the medal is obtained by the application of burnt sienna, liver of sulphur, or sal ammoniac for bronze. For silver, any oxide that will give a dark background is used. The shading of the surfaces is brought out by means of pumice-stone.

Cast medals, another phase of the medallic art, are known to have existed as early as the fourth century B.C. The Romans used them as marks of distinction and as passes to the theater and games. Among the Chinese they were used as a kind of amulet.

In the Renaissance this form of medal became popular with Vittore Pisano of Verona, a painter of reputation, who was active as a medalist from 1439 to 1449. His ability as a medalist crowned him the foremost of his time. The portraiture of his men and women reveals their noblest traits. Pisano displayed great economy in draftsmanship and is unrivaled in his foreshortenings. His medals were all cast by the *cire perdue* process.

Attracted by his success, a great demand arose for portraits and allegories in the medal. Pisano also had many followers in his own country, and Germany and France sent their artists to study the medal in the place of its origin.

The process now followed in the making of the cast medal differs very little from the earliest methods. It is first modeled in wax; then plaster-of-Paris molds are taken, from which several positive plaster casts are made. These casts are then formed into a mold of sand or of plaster and asbestos, which constitutes the mold to receive the metal.

The casting by the *cire perdue* process differs from that ployed in a sand mold. Instead of making a plaster mold from the original wax model, a mold of clay preparation is made directly on the wax model, covering both sides

of the model and leaving an opening for the wax to run out when the mold is heated. After the wax is drawn out the molten metal is poured in its place.

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The century after Pisano's time saw a decline in the cast medal and a rise in the die medal. The jewelers succeeding the Renaissance period also produced chased medals or repoussé and flat-engraved medals.

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The process of making a chased medal consists of cutting a thin sheet of metal to the required size. The design is drawn upon it and placed on a bed of lead; various-shaped punches are used to hammer out the relief. The metal is then reversed and the outline enforced with a sharp edged tool.

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In Austria a school was opened for the education of medalists by Maria Theresa in 1768, and in 1803 a like school was established by the French government at Paris, as a part of the École des Beaux-Arts.

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The so-called modern renaissance of the medallic art had its birth in France in the early part of the nineteenth century. The most active medalists were David d'Angers, Oudine, and Ponscarme. Under the guidance of Pons-

carme the famous medalists Chaplain, Roty, and Charpentier studied.

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In Chaplain's works a remarkable boldness of plan, sober draftsmanship, and a fondness for heroic figuration are noticeable. He excels in the characterization of the subject without losing the classical element.

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Roty's art reveals other phases of thought. His art is saturated with the sensitiveness, imagination, and grace of the French character. He is both daring and subtle in his technique. Poetry and truth are delightfully mingled in his allegories and symbols. His draperies and garments display harmonious folds with exquisite transparency.

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Daniel Dupuis was another happily gifted French medalist.

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Yencesse, much inspired by the reliefs of Ponscarme, wrought into his work great subtlety of plan and effective color.

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Alexander Charpentier proved himself remarkably gifted, and gave his individuality to many medals and plaques. A great many of his plaques depict the daily life of the worker. His interpretation of form is distinctive in its simplicity and boldness. He is a realist of the highest

order, who discarded all tradition in composition without losing the exquisite sense of the decorative.

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The Vienna school had its Boehm, Scharff, Pawlik, Marschall, and many others.

Scharff, pupil of Boehm, left a large series of medals and medallions of exquisite delicacy of technique and composition distinctively Viennese.

Pawlik, a close follower of Scharff, produced a number of charming medals and plaques.

Marschall, now the foremost medalist of Vienna, has imbibed the modern decorative spirit and has already produced a large series of portraits and compositions full of grace and charm.

The field of the medal is unlimited.

VICTOR D. BRENNER.

Coin produced by rollers, 1633.

Medal of Elizabeth of England, 1587, cut directly in the dies with the aid of punches.

Struck medal from dies cut intaglio and punched letters, 1687.

Struck medal from intaglio-cut dies, 1556.

Cast medal from a lead impression taken from intaglio-cut dies by Warin, 1630.

Cast medal by Guillaume Dupré, 1601.

Cast medal by Matteo di Pasti, 1450.

Struck medal from dies cut intaglio by hand with the aid of punches,
by Otto Hamirani, 1734.

Struck medal from intaglio-cut dies, ornament and letters punched, by A. Schega, 1742.

Struck medal from intaglio-engraved dies, with punched ornament and letters, by George, 1802.

Struck medal, bust and letters punched, interior on the reverse cut intaglio, by I. Bianchi.

Engraved medal, 1672.

Chased medal by Peter Van Abeele of Holland, 1660.

Engraved medal made in 1651.

Medal by Chaplain, dies cut by machine, 1890.

Medal by Chaplain commemorating the election to the presidency of Casimir-Périer, dies cut by machine, 1894.

Plaquette by Roty commemorating the funeral of President Carnot, dies cut by machine, 1894.

Medal by Roty, dies engraved by machine, 1886.

Plaquette by Paul Du Bois, showing the impressionists' tendency in low-relief modeling, 1903.

Plaquette by Alexander Charpentier, representing painting, dies cut by machine.

Medal of Leopold of Bavaria by Hugo Kaufmann, contemporary sculptor and medalist, cut in steel by means of the reducing-machine.

Struck medal from cameo-cut dies by A. Scharff.

Struck medal from a cameo-cut die of the obverse, reverse cut intaglio,
by A. Scharff, 1883.

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